UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,135	03/15/2004	Permachanahalli S. Ramkummar	42P17109	3427

8791 7590 04/30/2008

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER	
HAN, QI	

ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
04/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/802,135	RAMKUMMAR ET AL.	
	Examiner	Art Unit	
	QI HAN	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,19-24 and 26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17, 19-24 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Response to Amendment

3. This communication is responsive to the applicant's amendment and RCE both filed on 03/19/2008. The applicant(s) amended claims 1, 4, 5, 7, 10, 11, 13,16, 17, 19, 20, 23, 24 and 26, and cancelled claims 18, 25 and 27-40 (see the amendment: pages 2-10).

Response to Arguments

4. Applicant's arguments filed on 03/19/2008 with respect to the claim rejection under 35 USC 102 and/or 103, have been fully considered but are moot in view of the new ground(s) of rejection, since the amended claims introduce new issue/new matter, which change the scope of the claims. It is also noted that the previous cited references are still applicable to the newly amended claims for the prior art rejection with new ground (see detail below).

It is noted that the Applicant's arguments are based on the newly amended claims and these claims have new matter and indefinite problems (see detail below), the response is, in general sense, directed to the corresponding claim rejections with new gourd (see below).

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Regarding claims 7-12, 20-24 and 26, the claimed subject matter of "a (the) storage medium…" lacks antecedent basis and/or specific description in the specification. It also is noted that in the specification, there is no any components related/connected to this subject matter.

Claim Rejections - 35 USC § 112

6. Claims 1-17, 19-24 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1-17, 19-24 and 26, the newly amended limitation of "to reuse (or using) the lookup table to encode a next data frame of the signal subsequent to the first data frame only if the next data frame of the signal is not an active voice data frame" introduces new

subject matter, which is not specifically disclosed in the original specification. It should be pointed out that that the content of the specification (i.e. paragraphs 12, 26 and 29-30) provided in the arguments (see Remarks: page 12, paragraph 2) is not fully supportive to the amended limitation(s).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-17, 19-24 and 26, rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-17, 19-24 and 26, the newly amended limitation of "to reuse (or using) the lookup table to encode a next data frame of the signal subsequent to the first data frame only if the next data frame of the signal is not an active voice data frame" is indefinite because it is unclear or confused that why need encoding the next data frame **to** the first data frame. It does not make sense for the examiner. It appears that the limitation should be clarified in at least one of two situations: encoding the next data frame (i) using (reusing) noise data in the lookup table, **or** (ii) using the corresponding noise data from first data frame.

Claim Rejections - 35 USC § 103

8. Claims 1-17, 19-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (see the specification: pages 1-10, Figs. 1-2, and the related content regarding the existing industrial standards, which is also referred to or based on the IDS: "ITU-T

Recommendation G.729" and "G.729 Annex B", 1996) hereinafter referenced as ADMISSION in view of THYSSEN (US 6,813,602).

As per **claim 13**, as best understood in view of the claim rejection under 35 USC 112 1st and 2nd (see above), ADMISSION discloses "ITU-T G.729" and 'G.729 Annex B') for coding of speech using CS-ACELP and using silence compression scheme (specification: p5-p6), comprising:

"an encoder (specification: Fig.1, 100) coupled to a communication channel (Fig. 1, 105) wherein the encoder is to compute a plurality of random noise samples [and to store the plurality of random noise samples in a lookup table], the encoder further to encode, if a voice activity is not detected in the signal, a first data frame of the signal to create a first non active voice frame" (Figs. 1-2, blocks 102-108, 202-210; p28, 'current excitation is computed...and...rescaled', 'the process loops for every subframe (non active voice subframe)…until the subframe is an active voice frame…'), wherein the encoder is

"to generate a first excitation based on the plurality of random noise samples [of the lookup table]" (Fig. 2, 206), and

"to generate the first non active voice frame based on a scale factor (gain) and the first excitation" (Fig. 2, 207-208),

"to generate a second excitation based on the plurality of random noise samples [of the lookup table]" (Fig. 2, 206, 209 and p28, 'the process loops' indicates non active subframe until the subframe is an active frame), and

"to generate a second non active voice frame based on the scale factor and the second excitation" (Fig. 2, 207-209 and p28; same as above step).

"a voice activity detector coupled to the encoder to detect for a non active voice signal" (Fig. 1, l04);

"a decoder (Fig.1, 106) coupled to the communication channel, the decoder further comprising a comfort noise generator to generate comfort noise if the voice activity detector detects the non active voice signal" (p22-p23).

ADMISSION does not expressly disclose the encoder "to **store** the plurality of random noise samples **in a lookup table**" and "to **reuse** the lookup table to encode a next data frame of the signal subsequent [to the first data frame] only if the next data frame of the signal is not an active voice data frame, wherein the encoder is to **alter** the scale factor **based on any change in a noise condition of the signal**". However, the feature is well known in the art as evidenced by THYSSEN who discloses 'methods and systems for searching a low complexity random coded book structure' (title), comprising re-usable 'random table (interpreted as lookup table)' with 'codebook' (col. 3, lines 1-12) and 'Gaussian codebook (also interpreted as lookup table) is structured to reduce the storage requirement and the computational complexity' (col. 30, lines 7-51); 'encoder...selects an excitation vector…and gain based on a variety of factors' including 'noise level (noise condition of the signal)', 'optimum (implying altering) gain value (scale factor)… from both the adaptive and fixed codebooks 257 and 261', 'joint optimization of both gain and adaptive and fixed codebooks', 'applies gain normalization, smoothing and quantization' (col. 7, lines 1-37), and Fig.2 showing 'control 275' controlling (altering) 'gc 263' (gain value, i.e. scale factor) based on 'noise level' in block 279; (also see, col. 23, lines 1-14,

col.31, lines 40-52, col. 33, line 65 to col. 35, line 30, which further suggests altering scale factor for the excitation of signal as claimed). One of ordinary skill in the art would have recognized that the random table and/or Gaussian codebook (both corresponding to lookup table) would be used for storing and generating random data corresponding to random noise samples for the encoder, and using the random table/Gaussian codebook in the process loops (so as being **only**) for non active voice frame/subframe disclosed by ADMISSION would repeatedly provide stored (reusable) random data (i.e. random noise samples), so that the result would be the same as that of using computed random data, but faster (duo lower computational complexity). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify ADMISSION's process loops for generating non active voice frames/subframes by providing reusing random noise samples (or vectors) stored in random table/Gaussian codebook and controlling (or altering) the gain value (scale factor) based on noise level for generating excitation of the signal as taught/suggested by THYSSEN, for the purpose (motivation) of improving the perceptual quality of speech and/or improving the background performance and noise level estimation (THYSSEN: col. 22, line 64 to col. 23, line 5) and reducing computational complexity (THYSSEN: col. 3, lines 11 and col. 30, lines 8-9).

As per **claim 14** (depending on claim 13), ADMISSION in view of THYSSEN further discloses "the comfort noise generator further configured to pad an excitation with zeros if a gain of a frame of the non active voice signal is zero" (Fig. 2, 202).

As per **claim 15** (depending on claim 14), ADMISSION in view of THYSSEN further discloses "the comfort noise generator further configured to generate random adaptive codebook parameters and fixed codebook parameters" (Fig. 2, 203).

As per **claim 16** (depending on claim 15), ADMISSION in view of THYSSEN further discloses:

"generating a random adaptive excitation based on the random adaptive codebook parameters" (ADMISSION: Fig. 2, 205);

"computing a sum of the random adaptive excitation and one of the random excitations" (ADMISSION: Fig. 2, 206); and

"rescaling the sum of the random adaptive excitation and one of the random excitations" (ADMISSION: Fig. 2, 206-207).

As per **claim 17** (depending on claim 16), ADMISSION in view of THYSSEN further discloses:

"computing a fixed codebook gain based on the fixed codebook parameters" (ADMISSION: Fig. 2, 207); and

"updating the current excitation with an algebraic-code-excited linear-prediction excitation" (ADMISSION: Fig. 2, 208).

As per **claims 19** (depending on claim 13), ADMISSION in view of THYSSEN further discloses "the random noise samples are Gaussian noise samples" (Fig. 2, 204 and p23).

As per **claims 1-6**, they recite a method. The rejection is based on the same reason described for apparatus claims 13-17 and 19 respectively, because claims recite the same or similar limitation(s) as claims 13-17 and 19 respectively.

As per **claims 7-12**, they recite storage medium. The rejection is based on the same reason described for apparatus claims 13-17 and 19 respectively, because claims recite the same or similar limitation(s) as claims 13-17 and 19 respectively.

As per **claims 20-24 and 26**, they recite storage medium. The rejection is based on the same reason described for apparatus claims 13-17 and 19 respectively, because claims recite the same or similar limitation(s) as claims 13-17 and 19 respectively.

Conclusion

9. Please address mail to be delivered by the United States Postal Service (USPS) as follows:

Mail Stop ____
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to: 571-273-8300, (for formal communications intended for entry)

Or: 571-273-8300, (for informal or draft communications, and please label "PROPOSED" or "DRAFT")

If no Mail Stop is indicated below, the line beginning Mail Stop should be omitted from the address.

Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

U.S. Patent and Trademark Office
Customer Window, Mail Stop _____
Randolph Building
Alexandria , VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qi Han whose telephone numbers is (571) 272-7604. The examiner can normally be reached on Monday through Thursday from 9:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see http://pair-direct.uspto.gov.

QH/qh

April 25, 2008

/Qi Han/
Examiner, Art Unit 2626